

PRESENTATION WOOD CARVING DESIGN WITH THIS NUMBER.

Hobbies

• A Weekly Journal •

For Amateurs of Both Sexes.

No. 9. VOL. I.

DECEMBER 14, 1895.

ONE PENNY.

Wood Carving for Amateurs.

Photographic Notes.

Stamp Collecting and Philatelic News.

Fretworking, Inlaying and Overlaying.

Bent Iron Work.

Our Midget Photo Frame Fretwork Competition,—
The Prize Awards.

Electricity,—The Induction Coil.

Cycling and Athletics.

Magic Lantern Exhibitions.

Weekly Presentation Design.

Prize Competitions, Correspondence, Etc.



CHAP. IX.

LANTERN LECTURES IN A VILLAGE, *Continued.*

PART 2.



OUR last chapter was closed with the announcement of an adjournment until the next Friday. Punctually at seven o'clock the Committee turned up in full force, and Major Good-all-round took the chair. The Secretary, Mr. Bend-at-will, said that he had not prepared any minutes of the last meeting, but had entered in a book the kind offers made by Mr. Distemper and Professor All-head. With regard to the screen the Committee would, he felt sure, be delighted to know that the work had been most successfully carried out, and that it answered the purpose admirably. Mr. Distemper had enclosed the rollers—as they would see if they stepped into the large school-room—in a light case, which closed with two spring catches, so that no dust could get to the screen, and it would last their schools for many years.

The Committee expressed themselves delighted, and the Major cordially thanked Mr. Distemper on their behalf.

The Secretary said that the screen was such a thorough success that he would, with Mr. Distemper's permission, make a careful drawing of it and write a description, and get his friend Mr. Paramidaphenot, the Editor of the *Snap-Shot and Fuzzzygraph Gazette*, to publish it in his journal. (Applause.)

The Major said they must also see the splendid "gas things" that Professor All-head had given them; they appeared to him very wonderful. In the "wet-plate days" they had bags, and when the pressure got low they used to get their friends to sit on the "bags" to get the gas out. (Laughter.)

The Secretary said that the business before them was the arranging of a programme for the winter session. If the Committee would allow him he should like to say that he had received many letters from ladies and gentlemen in the neighbourhood and elsewhere offering assistance.

He would give some of the suggestions that had been made. It must be quite understood that the lecturers proposed to give their services,

and he thought that they should be entertained by members of the Committee.

The Major interrupting said that:—Her Most Gracious Majesty the Queen was pleased upon occasions to ask distinguished subjects to "dine and sleep at Windsor Castle." In the case of their friends he should be pleased to be a humble imitator of Her Majesty—his house was at the service of Mr. Bend-at-will.

Proceeding, the Secretary said that so far he could see his way to obtain quite a dozen lectures. These included such varying subjects as:—"The War with China and Japan." A special correspondent of a prominent "Daily" would undertake this subject. Many of his slides had been made in Japan, and they were coloured by Japanese artists.

Their esteemed Vicar would lecture upon the Holy Land. He had quite recently returned from Palestine, and in the course of his travels had taken many Photographs. From these, Mr. Bend-at-will said, he had assisted to prepare Lantern Slides, and felt sure that a most delightful evening would result.

The Major said the Vicar was no stranger to their platform, and he prophesied for his evening a crowded house.

The Secretary continuing said that in the Christmas week he would suggest that they have a "Children's Evening." This he should be pleased to undertake, and proposed to have as a first part "Alice in Wonderland," the story to be told by children. He had already induced the mothers of four little girls to allow him to coach them up, and he had obtained a splendid set of slides which beautifully illustrated parts of the wonderful story. These parts would be recited by the children as the slides were shown. The evening would open with one of their good old Christmas carols. He had pressed into the service for the Children's Evening their Organist and Choirmaster, who in his turn would bring a "selected" Choir. In the second part he proposed to have some nursery rhymes musically described, and in order that the village boys and girls should wake up to the fact that it was really a Magic Lantern Show, he would have a set of real

Comic Slides, and finish with Lantern Fireworks, Kaleidoscopic effects. The Secretary apologised for describing the "Children's Evening" at such length, but he was very anxious that they should enjoy themselves.

Mr. Breadstuff, a gentleman who keeps the largest shop in our village, got up, evidently very nervous, and said:—"Mr. Major, Mr. Secretary, and gentlemen; I'm not good at talking, but really when I find a gentleman, for he is a gentleman, like Mr. Bend-at-will arranging such a splendid evening for our children, I feel I ought to do something. No one can appreciate pretty pictures more than I do, but for the life of me I could not get up and describe 'em. I can't sing, I can't play, but I must be in it. So gentlemen, as there'll be 'ten minutes for refreshments,' I suppose? may I make bold to ask if I may be allowed to give the dear children the refreshments. I know what they like, and if you only say yes they shall have it, bless their hearts!" (Applause.)

The Major got up at once and thanked Mr. Breadstuff, and said he was sure that his kind offer would be thoroughly appreciated by the children.

Mr. Malt-and-Hops said he would take fifty tickets for that evening. "You can have the money now, Mr. Secretary, I know where to place the tickets." (Applause.)

Mr. Bend-at-will said that he was quite overcome, and only hoped that the "Children's Evening" would be a success. Continuing he said that a friend of the Vicar's, he did not catch the name, would give them an evening on "The Heavens," illustrated with Photographs of the Moon and the better known planets.

The next announcement he felt sure would be received with enthusiasm. The Major's son, who they all knew as "Jack," was now a Lieutenant in the Royal Navy. Amongst other pastimes he had taken up Photography. He had been half round the world, and whilst on his voyages he had picked up as he would say:—"lots of good things," including Photographic Lantern Slides. He had promised an evening early in February, the title to be "The Queen's Navy—what I've seen and what I've heard."

The Secretary said that in March he understood there was to be a Temperance Mission. He had been approached by the Honorary Secretary of the Band of Hope, Miss Good-at-heart, upon the question of holding a "Temperance Night," and should like to have an expression of opinion before making any definite arrangements. He might say that the programme suggested was a Service of Song with a Temperance moral. The service would be sung by a special Choir, and the song illustrated.

The Major rose and said he could see no reason why they should not grant the permission. He was not himself a total abstainer, nor could he be called a drunkard by even his enemies, if he had any, in a village like theirs. Although they did all they could, there was drunkenness and intemperance, which was not by any means he feared confined to the masses. He thought that good might result from an Exhibition of Pictures that told the story of a drunkard's life and his conversion. He remembered seeing such Pictures, and he felt sure that oftentimes Pictures which spoke to people in a universal language were more telling than volumes of words.

The Vicar said he highly approved of the suggestion. He had seen strong men moved to tears by a temperance story told as a Service of Song, and illustrated with Lantern pictures.

The suggestion was unanimously agreed to.

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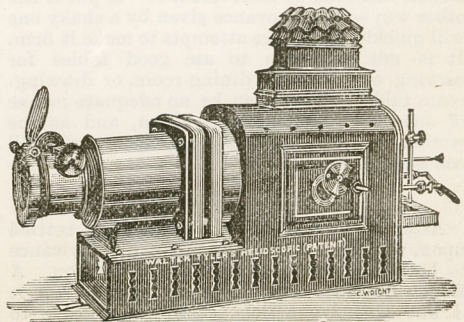
We have set out six subjects, and in the next issue of HOBBIES will give six more. It will be understood that these few chapters are written with the desire to show that even within the narrow limits of a village the Lantern may be made a means of affording pleasure and instruction. We should like to say that the playing of a little soft music as the Slide appears on the screen and when it is withdrawn is very helpful. The great mistake of all amateur Lanternists is the rushing on of Slides accompanied by a continuous torrent of talk or, worse still, reading. Remember your audience came to see the pictures; let them have the opportunity—you get relief and they are pleased.

(To be continued).

MAGIC LANTERNS AND SLIDES.

The Best and Cheapest House in the World for Lanterns and Slides is WALTER TYLER'S. Thousands of Slides on Sale or Hire at lowest prices. Many Hundreds of Lanterns second-hand; great bargains. The Helioscopic Lantern, the best made. Second-hand Lists and Small Catalogues post free. Large Catalogue, 12 stamps.

WALTER TYLER,
48 to 50, and 94, Waterloo Road,
LONDON, S.E.



WOOD CARVING FOR AMATEURS

CHAP. II.—REQUISITES.

BENCHES.



BEFORE speaking of the actual tools which perform the Carving work, it will be advisable to mention the other accessories which are more or less necessary.

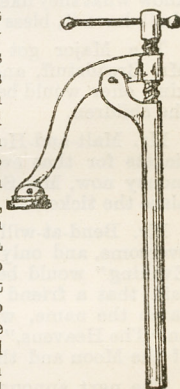
A Bench is the first of these. Amateurs who go in for a special Bench should have it made about three feet six inches long by two feet wide, and from three feet to three feet six inches high, according to the worker's own size. It will be seen that the height is given so that the work may be done standing. This is strongly recommended. No one can have full freedom when sitting down, although a rest might occasionally be taken when the background was being worked, or when some less important parts were receiving attention. An ordinary office stool will be found most suitable for this; it should be high enough to allow the arms their full swing. The Bench must be strong in every way, and it is well to fix it to the floor, so that there may be no shaking.

Those who have no intention of going to the expense of purchasing a Bench will find a strong plain table most serviceable; and this should be a fairly unimportant article of household furniture, so that sundry liberties may be taken with it—such as boring holes in the top, or fixing a Vice to the edge. Unless the table is very heavy, it should also be screwed to the floor. When important work is being carved, the necessity of having a secure and steady Bench will soon be discovered, or—to put it the other way—the annoyance given by a shaky one will quickly encourage attempts to make it firm. It is not advisable to use good tables for carving on—that is, dining-room or drawing-room tables. There can be no adequate means of attaching the panel to them, and as the worker is thus handicapped, the work will consequently suffer.

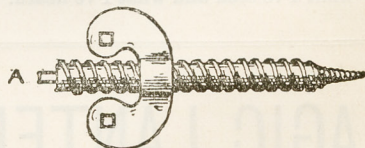
HOLDING APPLIANCES.

After the Bench or Table has been settled upon, what is next wanted is some contrivance to hold the Carved panel firmly in position. A Bench Holdfast may first be mentioned, but it is an expensive article, costing from five to

seven shillings, and need not be procured by an ordinary worker. The article to use is a Wood Carver's, or, as it is sometimes called, a Bench Screw. Several holes should be bored in the Bench at convenient places, so that this may pass through them. To use the Screw, first take off the nut. On each wing will be found a square hole which fits on to the point A; using the nut as a wrench, screw the sharp point into the back of the panel, then slip the A end through one of the Bench holes, place on the nut, and screw up tightly. The panel will then be held perfectly secure. A square block of wood with a hole in it should be placed on the Screw, so as to come between the nut and the underside of the Bench. It prevents the Bench from getting worn, and if the Screw shaft be long, it also saves time. Any hard wood will do for this purpose.



BENCH
HOLDFAST.

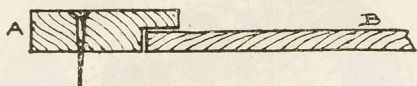


BENCH SCREW.

Bench Screws may be had from eight to twelve inches in length. The eight-inch size is large enough for ordinary use, and can be bought for three shillings and sixpence.

If both sides of the Carved panel are to be seen when finished, the Screw must not be inserted into it. The plan in such a case is to take an ordinary deal board, and glue the panel to it. A piece of paper should always be placed in between; glue the paper to the deal board, and then the edges of the panel to the paper. When the whole has been pressed under some weight, and the glue is hardened, all will be quite secure. The board may then be fixed to the Bench with the Screw.

In cases where glue would spoil the back of the panel, fixing could be done with brass-headed carpet nails, or with a Wood Clip such as is shewn in the accompanying sketch. The



WOOD CLIP.

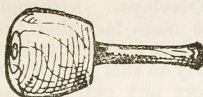
Clip is screwed to the deal board, with the lip catching the panel edge, and thus holding it firmly in position. If preferred, these Clips could be used to hold the panel direct to the Bench. They are very easily made.

Ordinary Fretwork Cramps, which cost from sixpence to a shilling each, would be found useful for fixing work to a table which could not have a hole bored in it.

VICES.

When turned legs and balusters, or any awkwardly-shaped articles are being carved, it is difficult to get on without the aid of a Vice. Vices are not cheap, but they are very useful in more ways than one, and for other work besides Carving; so, if the amateur can afford one, he will find it a valuable addition to his workshop. A good Bench Vice, with steel jaws, could be had for four shillings. Wooden ones are about the same price, and are often sufficient for the purpose. Stronger Vices—"Joiners," "Grip," "Parallel," "Instantaneous," etc., can be had from ten shillings upwards. The worker should not buy one of these till he finds the actual necessity for it, by which time he ought to know exactly what sort of article will best suit his requirements.

MISCELLANEOUS ARTICLES.



CARVER'S MALLET.

"Carver's" Mallet should be specified.

A Router, which costs a shilling, is occasionally useful for background purposes. It is not a tool which should be used often, but with certain Patterns it is a saving of labour.

Wood-Carving Rifflers are now and then employed, though not often. They are cheap, and one might be added to the collection. A Riffler is made with a file at one end and a rasp at the other, and finely cut ones are specially supplied for Carving. They are chiefly used in figure work, but may occasionally be wanted otherwise. Neither Fretwork Files nor Sandpaper should ever be used, as they destroy all spirit in the ornament.

As the sharpening of Tools is almost a science in itself, a Washita Hone, a selection of Arkansas Slips, Charnley Forest Blue Stones, or thin slips of Slate will be wanted, but these will be spoken of later on.

A Strop, which is prepared with tallow and emery, is also required.

When Tools get worn to such an extent that the Hone is ineffective to produce an edge, a Grindstone must be procured. This costs money, and a good one, ten inches in size and fitted in an iron frame, can hardly be bought for less than nine shillings. A small six inch one could be had for five or six shillings, but it has much less power.

A few sheets of Glasspaper for pointing the Arkansas Slips, some tracing and carbon paper, a pair of compasses, and perhaps some modelling wax for taking impressions from Carved models, practically complete the "extra" outfit. The list seems long, and it is certainly not advisable to go in for everything at first. The initial expense must necessarily be a little heavy, and economy must be practised till experience and skill justify an increased outlay.

The various Tools will be described in the following chapter.

(To be continued.)

HOME CARPENTRY FOR HANDY MEN.—Amateurs and others who have adopted carpentry as a hobby will welcome a new book by Mr. Francis Chilton-Young (author of *Every Man His Own Mechanic*), which has recently been published by Messrs. Ward, Lock, and Bowden. *Home Carpentry for Handy Men* is not a handbook; it is a complete work of reference, and must prove invaluable to all who undertake their own carpentry and building, whether in the house, the garden, or the farmstead. The book deals exhaustively with every imaginable structure which it might be desirable to erect, and the sound information is particularly valuable, as it is apparently the outcome of practical knowledge, and is treated in a thoroughly practical manner. Special care has been taken in describing the various methods of construction, and although superfluous technicalities have been suppressed, all detail matters have received careful attention. The book is strongly bound in cloth, and is published at 7s. 6d.; it contains nearly 800 pages, boasts of 550 illustrations, and is furnished with a useful general index, and also an index to the diagrams. We have no hesitation in recommending it to those readers who go in for carpentry and joinery work.

Phil May's Winter Annual

Of all Booksellers, Newsagents, and Bookstalls.

Publishers: **WALTER HADDON,**

Bouverie House, Salisbury Square, London, E.C.

NOTICE TO CONTRIBUTORS.

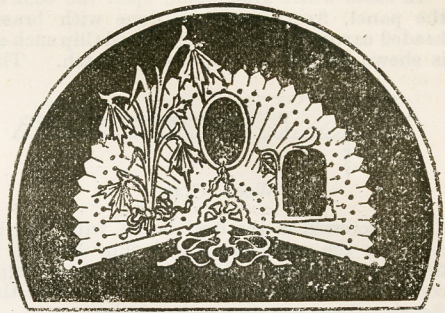
The Editor of "Hobbies" is always ready to receive Suggestions for Articles for insertion in the paper. Any manuscript sent for his consideration must however be accompanied by a fully addressed and stamped envelope. Unsuitable contributions will be returned without avoidable delay, but it must be distinctly understood that the Editor will not hold himself responsible for the loss of any manuscript.

"HOBBIES"

FRETWORK

COMPETITION.

MIDGET PHOTOGRAPH FRAME.



THE PRIZE AWARDS.

First Prize:—A Treadle Fretwork Machine, with Nickel Plated Tilting Table, etc., E. A. GRANT, 7, Lovely Lane, Warrington.

Second Prize:—A Finely Nickel Plated and Polished 14-inch Hand Fretsaw Frame, EDWARD C. FLANN, 2, Meridian Terrace, Bishopston, Bristol.

Third Prizes (six):—One Gross of the Best Fretsaw Blades each, HARRY BEECH, 18, Cherry Street, Wolverhampton; M. STENNING, 8, Fenton Street, Leeds; N. D. BROOKS, 50, Argyle Road, Brighton; JAMES W. PARTRIDGE, Lloyd's Bank, Limited, Alvechurch; HAROLD G. NEUMEGEN, 34, Beaufort Street, Chelsea, S.W.; H. L. FRENCH, (aged 11,) Chancery Lane, Thrapston, Norths.

Highly Commended:—JAMES GOUGH, Wednesbury; J. EDWARDS, Liverpool; SAM BEECH, Wolverhampton; S. BROWN, Leicester; T. K. ROBINSON, Leeds; T. PICKERING, Durham; and JAMES DOUGLAS, Milngavie, Scotland.

The success of this Competition has far exceeded our greatest expectations. Instead of receiving a few score of Photo Frames, some hundreds have been sent in, and for the past fortnight our editorial offices have been transformed into a small exhibition where privileged visitors have been pouring in to view the articles. Arranged systematically on long tables the display was most effective; altogether, between twenty-five and thirty different varieties of wood were used, varying in colour from ivory white and bright orange to rich red and ebony black. And not only has the result surpassed our anticipations in point of numbers, but—what is of more importance—the excellence of the work has been most gratifying, and proves clearly that Fretwork is a favourite hobby amongst our readers. Indeed, we saw from the very outset that it would be quite impossible to select only three Prize winners without doing some injustice to others, and—as intimated last week—we have been obliged to award five additional Third Prizes. Even now we are reluctantly compelled to pass over a number of extremely meritorious pieces of work, and we must explain to the numerous competitors who may naturally feel disappointed at not receiving any special commendation, that their Photo Frames are not necessarily of inferior merit, but have simply been outmatched by others where the general work shewed more care and finish.

THE PRIZE ARTICLES.

The Photo Frame which has been awarded the foremost place is pure white. It is cut entirely of Holly, the Fan of one-eighth-inch, and the Overlay of one-sixteenth-inch thickness. Apart from all considerations of execution, this article had by far the most striking and handsome appearance, and we would strongly advise all competitors and others to try a Frame in white alone. Holly can seldom be obtained pure and free from defects, but White Sycamore and White Chestnut are excellent substitutes; they are practically similar in appearance, and can always be had in good condition.

The work of this First Prize winner was excellent; the cutting was clear, sharp, and accurate, and the finishing clean and neat in every way. The Photo Frame, of course, was left unpolished, as all articles made of white wood should be.

The Second Prize Frame was made of highly polished figured Mahogany (3-ply) with unpolished Plane Tree Overlays. Although exceedingly well done, the mere fact that the Fan background was polished had no weight with the Judges, particularly as this part of the work had been done before any cutting was commenced. But the work throughout was admirable, and left little doubt as to the position which the Frame should take.

Of the Third Prize winners, Harry Beech sent a handsome Frame made entirely of Celluloid (which, to novices, we may explain is imitation Ivory). Here, again, no preference was shewn to the competitor for employing a special material, but the article was judged solely on its own merits, and the award made accordingly. Celluloid was used in several other cases, but not with success. In this instance the background was $\frac{1}{16}$ inch thick, and the Overlay $\frac{3}{32}$ inch.

The Frame submitted by M. Stenning was of plain Dark Rosewood, with white Overlays, and was remarkably well cut and finished.

An excellent example of work was sent by N. D. Brooks, whose plain white Overlay Ornament standing against a polished Satin-Walnut ground made a very effective Frame. When received at our office the Overlay had become entirely detached from the Fan, but in no case was any damage in transit allowed to prejudice an article, and the work here was so good that it could not be overlooked. We might

suggest that when Overlay is to be applied to a polished ground, the gloss should always be scratched off that part which the Ornament is to lie against, otherwise, unless fine nails or pin points are used, the glue will not hold.

James W. Partridge sent us a Frame of Walnut and White—all plain. The cutting throughout was clear and sharp, and the finishing good.

A somewhat similar one was sent by Harold G. Neumegen, who stated that it had been cut entirely with a Hand Frame, and that he had not broken a single Saw Blade during the work.

An exceedingly meritorious example of careful Fretcutting was submitted by one of the youngest competitors, H. L. French. His Photo Frame was of plain Padouk with white Overlays, and was cut with the ordinary Hand Saw. Apart from any consideration of age, the work was of such good quality that when we extended the Prize List we had not the slightest hesitation in including his name.

We could fill pages in describing the many excellent Frames sent in, but a few more must be sufficient. One of the most pleasant effects of colour was obtained by Arthur J. Dicks, who selected a choice bit of Pencil Cedar with White Overlays. Another attractive combination was that chosen by Geo. E. Dyson, who had procured a very fine piece of grey-stained Sycamore (Silberggris). J. Watford cut his Overlay Ornament in metal, and would easily have placed himself high on the list had he only taken a little more care with his Walnut background. H. Faulkes, Edward Mathews, and G. A. Savage shewed capital work, but used too heavy Overlays. The Walnut and White Frame of E. Madge, cut with a Shilling Hand Saw, did not escape our notice, and those submitted by Frans Gustaf Andersson (polished Padouk and White), John Turner (polished Walnut and White), and W. H. Luxton (plain Canary and White) are all worthy of mention. A. Fowler's Celluloid Fan was well cut, but the painting of his Overlay was hardly successful. With a single word of praise to F. J. Evans and C. Henderson, we may now pass to some of the faulty articles.

SUGGESTIONS.

We can see that many Fretworkers have attempted Overlay work for the first time with this Midget Photo Frame. Considering this, the work as a whole is excellent, and in pointing out a few general faults we are merely giving suggestions as to what might be done another time. One of the most noticeable errors which many competitors have fallen into is in an unfortunate selection of wood. We originally suggested that one-eighth-inch wood should be used for the Fan, and one-sixteenth-inch for the Overlay, and the most successful Frames are those where these thicknesses have been adopted. Many workers, however, have overlooked our hints, and some have gone the length of using quarter-inch wood for both background and Overlay. This naturally spoils the work, and we may safely say that in fifty cases out of every hundred the appearance of the article was made heavy and clumsy owing to the use of too thick a wood for the applied ornament.

In a number of cases want of judgment has also been shown in the selection of colour.

Nothing can surpass pure white, but no other wood could safely be recommended for both Fan or Overlay; and those who have tried a one-coloured Frame of Walnut, Purple wood, etc., must now admit that a contrast would have been preferable. Unquestionably, white is the most suitable wood for the Overlays, and it should not be over one-sixteenth-inch in thickness. Many competitors have used very thin veneer wood, but this has too much the appearance of paper, and is, besides, too delicate when there are any projecting parts. With white Overlay, suitable backgrounds could be made from Mahogany, Rosewood, Walnut, Orange, Padouk, Pencil Cedar, or other similar varieties. Birds' Eye Maple, or figured Oak, should not be used, as they appear too "spotty."

A great many Frames were simply ruined through an indiscriminate use of varnish, and this was all the more unfortunate as the cutting out and fitting together had been executed neatly. We are well aware that many Fretworkers look upon a plain article as *unfinished*, but varnish, when used at all, should be applied most sparingly; and certainly those who looked upon the hundreds of Photo Frames in our office, and compared the varnished with the plain, would have no hesitation in preferring the latter. In three cases good examples of *polished* backgrounds were submitted (each with plain Overlays), but in every case of varnishing the effect was marred. We would strongly urge every unsuccessful competitor to try another Frame; let him use woods of one-eighth-inch and one-sixteenth-inch thickness, and choose either pure white or some such contrast as we have suggested, and there is little doubt that he will then entertain a higher opinion of *Hobbies* Presentation Design No. 1.

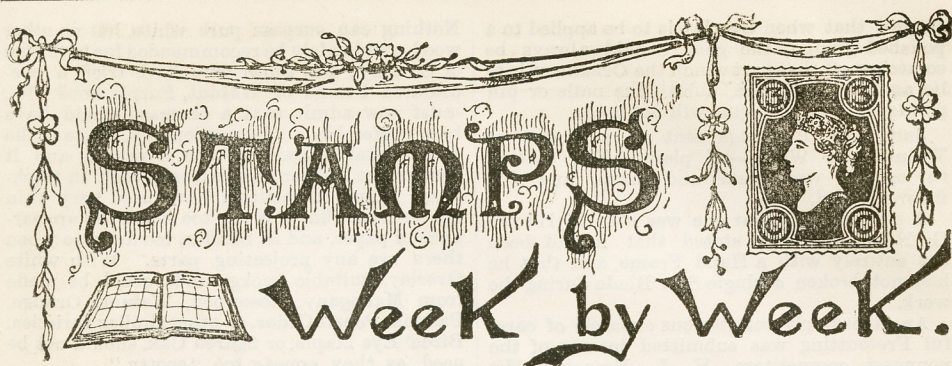
We cannot profess to be enthusiastic over the plan of gilding, silvering, painting, or enamelling the Overlays. In every case where this was attempted it is our candid opinion that the effect was spoiled rather than improved.

Many competitors would do well to pay more attention to the finishing of their articles; that is, in using sandpaper more freely. Ragged edges have an unpleasant appearance, and only a little care and patience are required to remove them. Some good pieces of work had to be passed over for this reason. Again, in cutting the radiated lines in the Fan, too fine a Saw Blade was generally used, with the result that the lines were often lost.

Unfortunately many Frames were received at our office with the Overlay parts slightly damaged, but this was due more to the natural delicacy of the article than to careless packing or rough usage in transit. Indeed, several competitors would deserve a special prize for the ingenuity of their packing arrangements. In very few cases do we think that the damage to Frames will be beyond repair, and we have made every effort to have them all repacked as carefully as before.

FURTHER COMPETITIONS.

We are now making arrangements for two new Competitions. One will be for the best Models of a "Victoria," the Design of which will be presented with *Hobbies* No. 10. We shall also have a simpler test Competition for readers under sixteen years of age. Particulars will be given next week.



STAMPS

Week by Week.

A Philatelic Causerie by PERCY C. BISHOP,

Joint Editor of the "STAMP COLLECTORS' FORTNIGHTLY" Ex-Editor of "THE PHILATELIC JOURNAL"
and "*PHILATELIC REVIEW OF REVIEWS*;" *General Secretary of the LONDON PHILATELIC CLUB.*

FORGERIES are the bane of the young collector. In no less than five cases within one week the stamps sent to me for valuation have contained flagrant "frauds," such as could only deceive the very young Philatelist. Happily the Philatelic forger is not nearly so active now as in days gone by. The strong light of publicity, supplemented in several cases by imprisonment with hard labour, has been too much for him. Stamps are still forged and "faked" by various parties on the Continent, but so far as England is concerned, the evil has been almost entirely abolished.

Within the past month an Italian gentleman, who makes a speciality of forged European stamps, has been hawking his fraudulent wares among the stamp dealers of Paris. It is to the credit of those gentlemen that, so far from patronising his rubbishy goods, they have done all they can to spoil his rascally trade by exposing him in their circulars and other publications. The pity is that they could not hand him over to the tender mercies of the law. The wily Italian evidently knew enough of French law to guard against such a contingency as that. He forges only obsolete stamps such as Parma, Tuscany, Modena, Sicily, and old issues of Italy; and to forge these stamps is no offence under French law, as they are no longer of any intrinsic value. In England it is very different. Signor Italiano had better not bring his rubbishy goods to London, or he will very soon be making his bow to an English magistrate.

A case has for some time been troubling the French courts which turns on the very absurd point I have mentioned above. A M. Alphonse Levy was arraigned some two months ago on the charge of forging stamps. In defence Levy pleaded that he had imitated only the stamps of obsolete issues which could no longer be described as "Government securities." This plea, had it been sustained, would—strange as it may sound to English ears—have procured Levy his liberty; but the French Judge had the good sense to order an investigation, and the

matter was submitted to Mons. Arthur Manry, the eminent Parisian Philatelist, for expert opinion. Mons. Manry, on consulting a list of the stamps which Levy had admittedly forged, at once saw that certain British Colonials, including Cape of Good Hope and Natal, were included therein. Now it happens that no British Colonial stamps have ever been demonetised. An old triangular Cape of Good Hope stamp, if unused, is just as much available for postage as a Cape stamp of the current issue. Thus Mons. Alphonse Levy would appear to have overreached himself. The matter is again before the Judge, on the strength of Mons. Manry's report; and it is probable that Levy will soon be wishing that his knowledge of the postal administration of the British Colonies had been a little more extensive.

But the great and glaring stupidity about this case is the anomalous condition of the French law, which would punish a man for imitating, say a common German stamp of the current issue, while it held him guiltless for forging say a 60 crazie stamp of Tuscany, worth to a Philatelist about £10. It is a matter of surprise that the leading Philatelists of France do not combine to do something in this matter.

This subject of stamp forgery is of such vast importance that I could fill my article with it every week; but I fear I have already given it an undue proportion of space. My real object in opening the subject was to announce that I shall shortly commence a series of notes on the most dangerous forgeries in the market, illustrating the same in such a way as to make the detection of dangerous counterfeits a matter of comparative ease. My readers can help me in this by suggesting the countries which have given them the most trouble. With what country shall I start, please?

To Mr. Adolph Lohmeyer, a prominent American collector, the thanks of all Philatelists are due for a most acceptable reform. Every collector who recruits his collection with stamps from his own foreign correspondence has at some time or another had to complain of an unduly heavy postmarking, or in some cases of an unnecessary repetition of the postmark. I have seen stamps that would have been most

valuable rendered absolutely worthless by reiterated cancellation. Mr. Lohmeyer has pointed out to the American Postal Authorities that a stamp once cancelled is always cancelled, and that it is not necessary for every postmaster through whose hands a letter or book-packet may pass, to impress upon the stamp his own particular cancellation. The reader may object that this reform will benefit only American collectors; but I think that indirectly it will prove to be a boon to the whole stamp collecting community.

THE PLATE NUMBERS OF ENGLISH STAMPS—Continued.

THE TWOPENCE, BLUE (1840-1879).

Until 1858, when plate 7 was approved for issue, no plate numbers appeared on the blue twopenny stamps. For this reason plates 2, 3, 4, and 5 are only to be distinguished one from another by minute differences of design. Plate 1, according to Hilckes and other authorities, was never used.

The plate numbers which appear upon the stamps (in the same position as on the 1d. red) are as follows:—7 (June, 1858), 8 (July, 1859), 9 (March, 1861), 12 (Jan., 1868), 13 (March, 1868), 14 (April 24th, 1871), and 15 (Sept., 1875).

The dates given in parentheses are those upon which each plate was approved by the Treasury for issue to the public. Of these plate numbers the rarest are 7 and 12, catalogued by Hilckes at 1s. and 1s. 6d. respectively. But for the rarest specimens of the twopenny blue issue we must go back to the earlier varieties, which bear no plate number. Of these I shall give further particulars in some future number, illustrating my remarks with sketches of the distinctive features of each variety.

THE TWOPENCE-HALFPENNY (1875-1884).



The twopenny-halfpenny English stamps are a comparatively simple set, with no great rarities to lift them from the reach of the humblest collector. The plate number, as will be seen from the annexed sketch (illustrating plate 1) is very prominently placed near the top of the stamp.

Plates 1, 2, and 3 are in the lilac-rose colour, and have the anchor watermark. While plate 3 was still in use a change of watermark was decided on, and thus plate 3 is found also on paper watermarked orb.

Plates 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, and 17, all have the orb watermark, and are in the lilac-rose colour. In 1880, when plate 17 was in use, the colour of the 2½d. stamp was changed to blue; and plate 17 is found both in the lilac-rose and blue colours.

Plates 18, 19, and 20, all of the blue colour, have the orb watermark, but with the issue of plate 21, the watermark known as "large crown" was adopted for these stamps. Plates 21, 22, and 23, all watermarked large crown, conclude the list of 2½d. plate numbers.

Scarcest of all these are plates 1, 2, 3 (orb), and 17 (lilac-rose). Plate 2 on blued paper is valued by Mr. L'Estrange Ewen at £5.

NEW ISSUES OF STAMPS.

*. Items for this department will be gratefully received from any Philatelic readers who happen to receive early information of new issues, or of impending changes in the postal arrangements of any country.

BELGIUM.—I am able to give the design of the new Belgian unpaid letter stamps. The values and colours are—5 centimes, green; 10c., brown red; 20c., grey green; 50c., bistre, and 1 franc red. These stamps, I learn from a correspondent, are likely to be very much used, for at Antwerp alone the amount collected daily on account of insufficiently paid postage exceeds 300 francs.



BRITISH BECHUANALAND, having lost its independence as a separate State, loses also its stamps. Henceforth Cape of Good Hope stamps will be used.

GIBRALTER.—There has been a change, or rather a multiplication of colours, of the 1 peseta stamp. It is now printed in brown and blue.

PORTUGAL, like her neighbour Spain, is going in for a complete new set, with head of Dom Carlos to left. The values range from 2½ reis. up to 300 reis., there being thirteen stamps to the set.

QUEENSLAND's new 5d. stamp is to hand. It is singular that there has hitherto been no 5d. stamp for this Colony. In design the new stamp is similar to the 2½d., except that the Queen's head is on a plain groundwork. In colour the new comer is a full chocolate.

URUGUAY has two new and most picturesque stamps, a 1 cent., olive, bearing the figure of a vaquero, and a 5 cent., brick red, with a picture of a locomotive.

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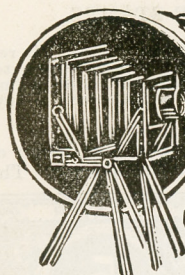
STAMP COLLECTORS



Should send 1d. Stamp to HARRY HILCKES & Co., Ltd., 64, Cheapside, London, E.C., for "Specimen" copy of **Stamp Collectors' Fortnightly**. Contains articles for beginners, as well as for advanced Collectors.

THE BEST STAMP PAPER GOING!

We have received from Mr. Ernest Nister the "Victorian" Stamp Album (price 6d.) and the "Rowland Hill" Stamp Album (price 1s.) Both are well arranged and neatly bound, and young beginners will find them very useful.



PHOTOGRAPHY

for Amateurs

NOTES OF THE WEEK.

IT is very interesting to note that amongst readers of *Hobbies* there are many interested in Photography. We want to encourage this interest and shall be delighted to do all in our power to help Photographers, whether professional or amateur. If in the ordinary course difficulties are met with, we shall be very glad to give advice upon any point. We hope our readers will not hesitate to send up Photographs or Lantern Slides for criticism. We shall be just and candid, whatever remarks we may make or whatever advice we may give, we shall only be actuated by one feeling, and that is our desire that all who practise Photography shall do their best, and to that end we shall help them.

In our issue of the 23rd ult. we commented upon the formation of a "Lantern Slide Exchange" in connection with *Hobbies*. This, we feel sure, is a possibility, and we are backed up in that surmise by the receipt of several letters. From the one which is most to the point, that of Mr. J. Boyle, junr., we extract the following:—

"I enclose particulars of a "Lantern Slide Exchange," and should be pleased to give you any further particulars; noticing your scheme I might say that I have generally found Lanternists opposed to parting with their Slides for good, and to prefer to lend same."

Another correspondent, Mr. L. W. Yardley, writes:—"My purpose of writing is to support your idea of a "Lantern Slide Exchange." I welcome the project, as I have been personally trying to do something towards making the lives of the very poor more endurable and happier, but the difficulty has been the Slides. I have a large Oxy-hydrogen Biunial Lantern and a 12 foot screen. I have given several exhibitions, and contemplate giving one this Xmas as a free treat to the poor in the district in which I work."

These two letters will, we should think, be quite sufficient to induce those who can to come forward and help. We renew our offer of 50 Slides, and if we can induce Mr. Boyle to take up the work of Organising Secretary, something might soon be done. He has sent us a set of Rules which we presume apply to an existing "Lantern Slide Exchange," as we note that the "Exchange" is limited to 30 members. Entrance Fee 1/- Annual Subscription 2/6. Ordinary members have to place at the disposal of the "Exchange" not less than 50 Slides. All applications for loans of Slides to be accompanied with 6d. in stamps to form a fund

for replacing broken Slides. All Slides are sent *Carriage Forward*, &c., &c. It seems to us that Mr. Boyle has sketched out quite an ideal "Lantern Slide Exchange." An aggregate of 1,500 Slides—30 sets of 50 each—would give instruction and pleasure to hundreds. If 20 members are enrolled by the 1st January, we will increase our gift to 100 Slides, and if 30, to 150 Slides. Now then readers of *Hobbies*, come up and form your first Club! Mark all correspondence on this subject "Photography" c/o Editor *Hobbies*, &c., &c.

A few nights since the Camera Club Lantern was put to a novel purpose. A member of the Committee, Sir David Salomons, who is much interested in Motor-carriages, occupied the chair, and Mr. G. H. Knight gave a lecture on "Mechanical Carriages," which was profusely illustrated with Lantern Slides. A variety of modern Motor-carriages were shown.

Mr. W. J. Dibdin, F.I.C., F.C.S., recently delivered a capital lecture upon Micro-Photography at the Lewisham Camera Club. He enumerated eight distinct points as being especially worth consideration, they were:—(1) The microscope, lens, and eyepiece. (2) Illumination. (3) Camera. (4) Adjustment of Image on Focussing Screen. (5) Exposure. (6) Development. (7) Plates. (8) Printing—P.O.P. for detail. Concluding his lecture Mr. Dibdin said:—"The novice must be prepared to spend no small amount of patience and plates; much depends on the accurate adjustment of the light and the focussing. The requisite skill can only come by simple work; no one need be discouraged by a few failures at first."

In an article upon "The Adaptation of Means to Ends" over the initials C. J. in our contemporary *Photography*, we read:—"In general, slow plates give greater density, more contrast, and a steeper gradation of tones than rapid plates, but few Photographers take advantage of this difference. Too many consider that plates differ only in speed and being better or worse than others. Our advice to all workers in Photography has ever been only to use rapid plates for very special purposes. Few can appreciate such fractions of time as 1/100th of a second with the result that, we venture to say, one-half of the failures in Photography are due to the use of rapid plates, and consequent over-exposure."

Mr. Henry Norman, who proceeds to Ashanti as war correspondent for the *Daily Chronicle*, is fully equipped with Photographic apparatus; his kit includes a "Pocket Kodak."

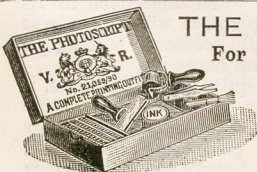
The Collotype process of reproducing Photographs is quite within the reach of the man with a Hobby. Upon this subject Mr. W. T. Wilkinson, who is an authority, recently at the Brixton and Chapham Camera Club said:—The process did not necessarily require an expensive outfit; an amateur could obtain what was necessary for about £3 or £4. A proper Collotype press cost £10 or upwards, but was not indispensable, a very efficient substitute being obtained in one of the machines with rubber rollers for domestic purposes at a cost of fourteen or fifteen shillings, and a drying oven could easily be made at small expense by the exercise of a little ingenuity.

The Photographic Club have held a "Limelight Jet Competition." Mr. Andrew Pringle, F.R.M.S., presided; many jets were offered in competition and elaborate testings made and duly registered. The "Otway" jet, made by Mr. Scarborough, was declared to be the best. This jet consumed about eighteen feet of "Mixed" gas per hour, and gave better results than any other, many of which used a much larger quantity of gas. We understand that Mr. Scarborough is a man with a Hobby—the Lantern. He is Honorary Lanternist to the London Institution.

The Photographic Copyright Union has now been fairly started. One of the principal objects of the Union is to secure to the owners of Copyright Photographs a reasonable fee from Newspaper and Magazine proprietors for the permission to reproduce Photographs. The rule referring to this subject reads:—"That each member promises not to allow a Copyright Picture belonging to him to be reproduced, whether registered or not, for a less fee than 10/6 for a portrait, and 5/- for a view; but he is at liberty to charge a larger fee according to his own ideas as to its value." Amateurs are eligible for election as members, and as one revised rule reads:—"That there be a donation fund," and another "That shall be no annual subscription." There is likely to be a rush for election.

Dr. Hall Edwards, of Birmingham, has invented a "Lantern Slide-binder," which makes this too often tedious business a pleasure. The "Binder" holds the Slide firmly, and permits of the Slide being turned round at will. A grooved piece of metal receives the binding material, and with a lever action this is pressed over the edges of the Slide, and the binding is accomplished.

It will be noticed that many of the Christmas Cards this year owe their origin to Photography. It is a splendid "Hobby" to take up. Good quarter plate negatives are freely purchased by the best houses in this special trade at prices ranging from 2s. 6d. to 21s. Ofttimes only the permission of reproduction for Xmas Cards is insisted upon; for all other purposes the Photographer has the use of his negatives.



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IMPORTANT NOTICE.

The Supply of Back Numbers

The first and second numbers of *Hobbies* having been long since sold out, while the demand for them shows but little sign of abatement, we have thought it advisable to have these numbers reprinted, so that recent Subscribers may be enabled to complete their volumes.

These are now ready, and copies may be obtained through any newsagent, price 1d. each, or direct from the publishers, price 1½d. post free.

Owing to the largely increasing number of annual subscribers, we have decided to suspend the rule relating to the non-supply of Presentation Supplements with back numbers till the end of the year. Thus, till December 31st, we shall give away the *Presentation Designs* with all back numbers.

Terms of Subscription

	s.	d.
Three Months (including postage)	1	8
Six Months Do.	3	3
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All letters relating to subscriptions or back numbers should be addressed to the Publisher of *Hobbies*, Bouverie House, Salisbury Square, London, E.C.

SPECIAL OFFER TO ANNUAL SUBSCRIBERS.

ST. PAUL'S CATHEDRAL.

An illustrated description of a remarkable Design for a Fretwork Model of St. Paul's Cathedral will be found in *Hobbies* No. 1. We present a copy of this elaborate and strikingly original Design to everyone who sends postal orders for 6/6 for a year's subscription to *Hobbies*. The subscriber will thus receive by post every week for one year a copy of *Hobbies* with the usual Weekly Presentation Design, the value of which will never be less than threepence, and as a special present the Design for the model of St. Paul's, the price of which is half-a-crown. Any weekly subscriber who may wish for a copy of the St. Paul's Design can obtain one on sending a postal order for 2/6 to the Editor of *Hobbies*, Bouverie House, Salisbury Square, London, E.C. The offer to annual subscribers necessarily applies only to those sending their subscriptions direct to the Publisher at this office.

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CHAP. IX.—OVERLAYING.

IN Fretwork Patterns Overlay work has not hitherto received the attention it well deserves. Designers have neglected it, and still flood the market with novelties and curiosities which may appear striking in miniature, but are far from the possession of any artistic qualities. In reality Overlaying can be made a special feature in Fretwork. Over Inlaying it has the advantage of being much simpler, and it presents no difficulty to the Hand Saw worker.

Inlaying is purely a decorative Art, but Overlaying forms Ornament in relief; and although it may not be compared to carving, still it supplies a genuine, a simple, and an effective substitute.

On the door of some Fretwork Cabinet, or on the lid of a small Secrétaire, an Overlay Border supplies the want of a panel moulding; and in Models of Buildings, Overlaying is a necessary feature.

An advantage it has over mere Fret cutting is that the Article can usually be *solid*, and is consequently less liable—if liable at all—to break. Fig. 44 represents a door, the whole Ornament of which is overlaid. Thus the panel is of solid wood, and as the Ornament is glued on very tightly, the door will stand a fair amount of rough usage.

The thickness of wood used naturally depends on the size of the Article and on the nature of the Ornament. It is seldom advisable to employ material for Overlaying more than one-eighth of an inch thick. For general purposes, what is termed *Inlay* wood, (one-sixteenth of an inch in thickness,) which may be had in Rosewood, Walnut, Mahogany, Padouk, Orange, Satin, White Chestnut, and other varieties, is strongly recommended. Several layers may be done at once, and thin wood never gives a coarse effect to any Ornament, although always affording a certain light and shade.

Suppose that Fig. 44 is the door of a small Hanging Cupboard. It has been decided to make two Articles, one in Mahogany with Satinwood Overlay, and one in Orange with White Chestnut Overlay. There are a couple of doors in each Cupboard, so that the Fretworker has to cut four sets of Overlay, all of which are the same in pattern, and can therefore be done at once. With the double door, the centre Ornaments will, of course, be reversed, so as to give a little variety; but this does not alter the design.

Secure two pieces of White Chestnut, and two of Satinwood, of one-sixteenth inch material, nail altogether very firmly, and proceed to cut out with a fine Saw.

Were only one piece of Overlay Ornament required, it would be necessary to cut out at least two bits, as one-sixteenth inch wood is too thin for the Saw to cut with safety. Even when three or four Ornaments are done, it is not a bad plan to add an extra slip of common wood below, as the under piece is always apt to suffer.

The different bits must be nailed tightly, as any jerking would produce very ragged edges, and might spoil the work.

For this reason, it is suggested to drive in a few screws, as brass or wire nails may not hold sufficiently well.

The work of Sandpapering must be done very gently. Fine Glasspaper only should be used, and unless the Ornament is very large the wood should be rubbed on the paper. After the Overlay has been glued in position and is thoroughly fixed, it may receive another rub, care being taken not to round off any of the edges. With Chestnut, or any white wood, a fresh piece of Sandpaper should always be taken, as the darker sawdust of other woods will soil it.

Overlay Ornaments may be cut to almost any degree of fineness, and no one need hesitate to attempt a piece where there may be even the most extreme delicacy. Although the Ornament itself is so frail that one sometimes fears to breathe in its presence, when once fixed in its proper place, it will be ready to defy all comers—barring a chisel and hammer.

It is quite possible—more, it is highly probable—that in the course of experience some delicate piece may break off; but the beauty of Overlaying is that a clean breakage is of trifling consequence, and need

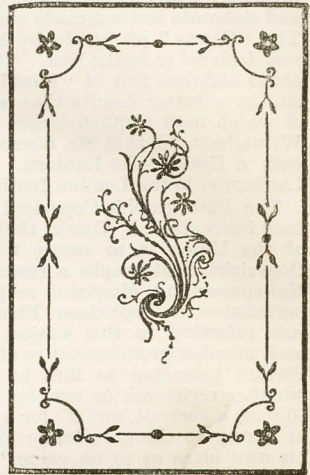


FIG. 44.



FIG. 45.

cause little or no anxiety. A twig or berry may be knocked off, as shown in Fig. 45; but if no splinters have been lost, it is the simplest matter to glue it again in its exact position, and a rub with Glasspaper will smooth everything over and hide the joint. Even did the berry happen to go amissing, another could easily be cut and planted in position.

However, the pleasure of deliberately breaking a piece of Ornament, merely to have the privilege of mending it, need not be indulged in. That would be enjoying a luxury to excess. But if an accident does happen (as it *will*, sometime or other), there is no necessity to jump rashly to the conclusion that everything is spoilt; any possibilities of repair should be duly considered before the amateur—forgets himself.

FIXING OVERLAYS.

To fix, paint the entire underside of the Ornament with glue, using a fine brush. For this purpose, it is often more convenient to use the strong liquid glue, which may be obtained in sixpenny bottles. This, however, is an open question. When ordinary glue is used, it should be dissolved to a consistency somewhat thinner than usual, and must be applied when hot. The wood should also be slightly heated. If the Overlay is to be left unvarnished, the glue brush must not be allowed to wander over the edge, and the liquid must be put on sparingly.

When it is seen that the Ornament is exactly in its right position, lay a flat board of wood above, and place the whole under some heavy weight. A copying press comes in very useful here, always provided that it is used in moderation. An extra turn of the screw would ruin the work; and, from the result, the world at large might fancy that some new scheme for Inlaying had been devised.

When White Chestnut, Holly, or any other light wood is employed for the Overlay Ornament, it is often preferred to varnish or polish the groundwork only. This, of course, should always be done before the Ornament is placed on. In the case of varnishing, the Overlay could be applied just after the last coat has been given. Thus the varnish, drying round the Ornament, would help to hold it very firmly. Care, however, should be taken that no dust is flying about. When Overlay is applied to a polished ground, the polish must be scraped off those parts where the Ornament is to lie; otherwise, the glue will not hold.

In speaking of polish and varnish, however, Amateur Fretworkers should be warned against a reckless use of the latter material. A few years ago it was deemed absolutely necessary for the finish of an article that it should receive a heavy coat of thick, sticky varnish. But now the general taste is becoming more refined, and experienced Fretcutters prefer to leave the wood in its native purity. There is no doubt that many articles, which present large plain surfaces, look better when polished, but polish has a very different appearance from varnish. A well-polished piece of work looks handsome, but a varnished article will soon become greasy and dirty. A definite rule can hardly be given, but certainly it may be said that varnish should only be used when the case positively demands it. Large flat surfaces might be polished, but small articles, such as Brackets and Table Ornaments,

should be left plain. On this subject more will be said in a future chapter.

Occasionally it may be felt that glue is not sufficient to hold the Ornament which has been cut. As neither screws nor nails can be used, and as even a pin point driven through in the way previously described might be noticeable, the following plan—which has often proved successful—may be suggested. Procure a number of fine Pins, and break off a little less than quarter of an inch from the point. Then take the small Pliers, hold the pin by the point end, (see Fig. 46,) and press the blunt extremity into the wood which is to be the background till only about one-sixteenth of an inch projects. This may be done all over, and the Ornament then put on as before. The sixteenth part of an inch seems a very meagre hold to put much faith in; but when twelve or twenty Pin points are driven in, the best glue used, and good pressure afterwards applied, the Overlay runs a small chance of springing loose.

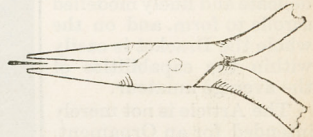


FIG. 46.

As in the case of Inlays, all Overlay work should be kept from sunlight, and should not be placed near a strong fire, as thin wood, however well seasoned, threatens to warp if exposed to great heat.

(To be continued.)

FRETWORK & CARVING.

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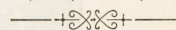
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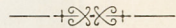
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Weekly Presentation Design.

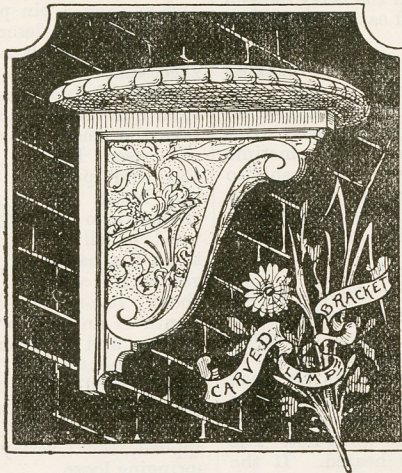
No. 9. CARVED LAMP BRACKET.

Most Carvers will find this a simpler Pattern to work to than the Adams Frame which was presented with *Hobbies* No. 6. The Design is Italian in character, but there are no delicate and finely modelled scrolls to form, and on the whole the Bracket is easily within the capabilities of the average amateur.

The Article is not merely intended for an Ornament, but when fitted together will be substantial and durable, and will be useful for the purpose for which it has been designed.

As most Carvers have preferences for certain woods, and use them for every article which they attempt, we need not recommend a particular wood as the one to be used. There are several varieties which are suitable, and the worker had better select that which he can handle most freely. Walnut or Italian Walnut are good woods, and Mahogany might be chosen if the Carver thoroughly understands how to manage the grain. The article is too small for oak.

The support is one inch in thickness, and the ornament throughout is in low relief, never rising beyond the level of the outer edge. On the face of this piece is a simply modelled "water



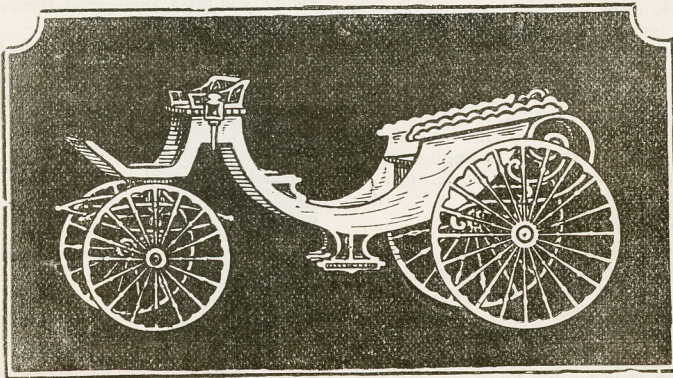
leaf," and there are two small flutes on the face of the upper volute. The Shelf should not be less than $\frac{5}{8}$ inch or $\frac{3}{4}$ inch thick. Only one half of the diagram can be shown, but no difficulty will be found in completing the arc with a pair of compasses. The nulls round the edge are very simply formed.

When the Bracket is completed it may be polished, but on no account should a bright gloss be put on. All carved work is seen to better advantage when dull, and a high finish should not be applied except in special cases.

The article may be fixed to any wall by means of ordinary brass hangers.

[Additional copies of this Design may be had, price 3d. each, on application to the Editor of *Hobbies*, Bouverie House, Salisbury Square, London, E.C. The Presentation Supplement will be given during the current week of publication only, and will not be supplied with back numbers. All additional copies of the Designs will have the Coupons, which are available for three months after the date of issue.]

PRESENTATION DESIGN No. 10.



DESIGN FOR FRETWORK MODEL OF A VICTORIA. FOR CARDS, ETC.

The above is a miniature of the Fretwork Design which will be given away with *Hobbies* No. 10. This is a particularly striking and handsome Pattern, and has been designed specially for *Hobbies*. It is thoroughly original in character, and when cut out and fitted up will make an elegant and attractive ornament. We can say without the slightest hesitation that this is a Design which no firm would sell for less than sixpence or ninepence, and many of less value are sold at a shilling. Readers who are desirous of securing more than one Design Sheet should send in their orders for additional copies of the paper at once, as only a limited number of sheets can meanwhile be printed, and further copies cannot be supplied for less than threepence. This Victoria will be the subject of our next Fretwork Competition, and handsome Prizes will be awarded for the best Models sent in. Full particulars will be given in next week's *Hobbies*.

PRIZE Competitions

It is our intention that all Competitions which will be announced from time to time in this column shall be decided by the skill or ingenuity of the Competitors, and not be in any way dependent on chance.

FRETWORK.—MIDGET PHOTOGRAPH FRAME.

For the result and particulars of this Competition see page 198.

PHOTOGRAPHY.—NOVEMBER COMPETITION.

For the best Photographs sent in last month, Prizes have been awarded as follows:—

First Prize, Ten Shillings, to F. M. Thomson, 22, Avenue Road, Southampton, for "Cockie."

Second Prize, Five Shillings, to R. W. Copeman, Kulos Cottage, Henstridge, for "Feeding his Pets."

Honourable mention to R. Phillips, for "Wells Cathedral from the Springs"; and to H. G. S. Fell, for "Approach to Cloisters, Gloucester Cathedral."

The Photographic Editor expresses his great satisfaction at the success of this Competition. Altogether 130 prints were received, and these we have classed as follows:—

First Class	30
Second Class	33
Third Class	67

We hope to reproduce the Prize Photographs in next week's issue of *Hobbies*, and also to give some particulars of the Competition.

INDOOR HOBBIES.

Two Prizes of Ten Shillings and Five Shillings are offered for the best suggestions for a New Indoor Hobby. Paragraphs must not exceed 200 words in length, and in deciding this competition the novelty and practical character of the suggestions will be chiefly taken into account. Communications, marked "Indoor Hobby," must reach us to-day, December 14th

FRETWORK DESIGNS

Two Prizes of Ten Shillings and Five Shillings will be given for the best outline sketch of a Fretwork Card Receiver. Size, style, and treatment are left entirely to the Competitor, but the artistic and original nature of the Design will have considerable weight with the adjudicators. Sketches will be returned if a fully stamped and addressed envelope is enclosed. Parcels, to be marked "Design," should reach us on or before December 21st.

PHOTOGRAPHY.

We give every month a prize of Ten Shillings for the best Photograph, not to exceed 7½-in. by 5-in., and Five Shillings for the second best. The choice of subject is left entirely to the Competitor. Photographs cannot be returned, and we reserve the right to reproduce any of them in *Hobbies*, if thought desirable. Photographs for Competition will be received up to the last day of each month, and those for this month must be sent to our office on or before December 31st, marked "Photo."

NOTICE TO COMPETITORS.

All Articles, Sketches, etc., for Competition should be addressed to the Editor of *Hobbies*, Bouverie House, Salisbury Square, London, E.C. The name and full address of Competitor must in every case be sent.

NOTE:—No correspondence can be entered into with Competitors, and all awards made will be final.

Photographic Hints for Amateurs.

PHOTOGRAPHS ON POST CARDS, MENUS, ETC.

The following formula has been propounded by Ehrmann, a German chemist of note:—

A.	
Ammoniacal Citrate of Iron	5.18 grs.
Distilled Water	28.39 "
B.	
Ferri-cyanide of Potassium	5.18 "
Distilled Water	28.39 "
C.	
Bichromate of Potassium ..	0.876 "
Water	7.09 "

The ferri-cyanide should be freed previously by washing off the yellowish dust with which it is covered. The three solutions are, after filtering, mixed in the Dark Room, and are applied with a brush and allowed to dry. The image appears of a greenish-blue; for fixing it is only necessary to wash in plain water. A slight blue tint in the whites may be removed by passing in water acidulated with a 5 per cent. solution of hydrochloric or citric acid.

PHOTOGRAPHY BY MOONLIGHT.

It is quite possible to take Photographs by bright moonlight, for which purpose use a rapid plate and an exposure about six times of that which would be given on a dull winter's day. The lens may be left uncovered for about an hour; slight over exposure will be of little consequence. Should there be snow on the ground the hour's exposure may be reduced to say about 40 minutes. Of course it is not advisable to set up the Camera anywhere if moving objects are likely to cross the field of view.

SNOW PICTURES.

It is difficult to give a rule for photographing snow scenes. If with bright sunshine, and using an R.R. lens, the following may be relied upon:—

Stop No.	1.	...	...	0.1 sec.
	2.	...	...	0.2 "
	3.	...	...	0.4 "
	4.	...	...	0.75 "
	5.	...	...	1.5 "
	6.	...	...	2.5 "

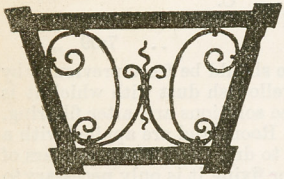
Should the sun not be shining use an actinometer.

HOW TO PHOTOGRAPH WATER.

It is a great mistake to think that in order to obtain a good Photograph, say of a waterfall or a running brook, that the plate must receive a very short exposure. Instantaneous Photographs of rapids look very much as if the whole had been turned into ice. This is due to the fact that the human eye is unable to see any object in less than one-tenth of a second. The quickest exposure for running water should be from one-fifth to one-tenth of a second. If this practice is followed there will be life and motion in the water. Robinson, for instance, advises for sea studies a slow drop-shutter exposure, and in many of his "wave" pictures the motion of the water is so well rendered that it can almost be felt.

BENT IRON WORK

CHAP. IX.—THE USES OF WOOD.



With a Pipe Rack, such as Fig. 67, a slip of wood about an inch broad will be very helpful in fitting the article together. When entirely

PIPE RACKS.

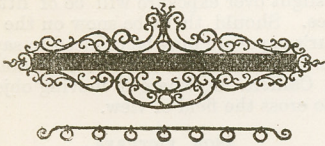


FIG. 67.

of Bent Iron, there is always a difficulty in fixing the Pipe Holder firmly to the back. The wood should be Ash, or some equally tough quality, and must not be less than one-quarter of an inch thick.

The curves and scrolls are fixed to the edge of this slip by means of small screw nails. Ordinary wire nails might occasionally be used, but the strain of the Iron is apt to pull them out; and in every article at least one or two screws should be introduced. The Holder can



FIG. 68.



FIG. 69.

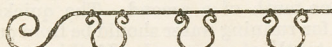


FIG. 70.



FIG. 71.

WITH numerous Bent Iron Work Ornaments it is advisable—even necessary—to introduce wood. It has been shown how Wall

Plates for Brackets and Hooks can be made, and how Wooden Stands are required for Letter and Newspaper Racks. For Pen Holders they are also useful, and one or two further instances where wood, in some way or other, may be employed advantageously will be given.

be fitted to the wood much more easily than to the Ribbon Strips, and will be considerably stronger. The wood in this case should be painted black, as the surface exposed is too small to look well when polished or varnished. In speaking of Pipe Racks, a few different methods of arranging the Holder are shown. (See Figs. 68 to 71.) These are but four out of many varieties. The matter gives little trouble, although care should be taken to have the pipe spaces of an easy and convenient size.

TABLE STANDS.

Another kind of article where wood can be safely used is the Table Stand. Figs. 72 and 73 give examples. In the former instance there is a narrow wood rim with a simple nulled outer edge. In the latter case there is a square border with a series of C curves outside it. These

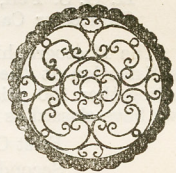


FIG. 72.

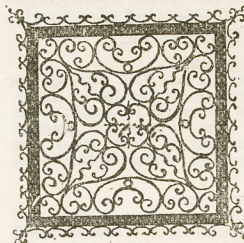


FIG. 73.

Stands would have small round wooden toes, which should be screwed on from below.

When the Stand is to be used as a mere mat, that is, if it lies flat on the table without any toes, wood is unnecessary. Bent Iron Mats, however, can only be laid on

a covered table, as they would scratch a polished surface.

The woodwork of Figs. 72 and 73 might be varnished if desired, but if the article is small blackening is better.

BOXES.

Bent Iron Work Boxes can be made up very neatly by using a skeleton woodwork frame.

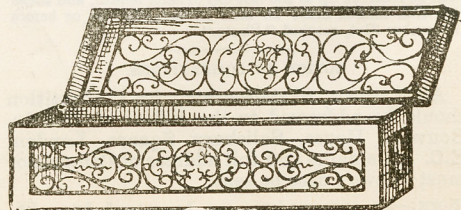


FIG. 74.

Fig. 74 shews rather a plain specimen, but others could be ornamented to any degree. With all Boxes great attention must be paid to the *proportion*, as large and clumsy ones when blackened all over have a very melancholy and funereal appearance. It is sometimes rather difficult to fit in the Ribbon Iron ornament; and if the Box be light and narrow small wire nails may be used for fixing instead of screws. When a hole is drilled in the metal, the nail can easily be pressed into the wood. There is no room to hammer it, but the sharp point can soon be induced to enter the edge of a piece of wood, which is usually soft.

The Box lid will be fixed with ordinary Brass hinges, which, like the rest of the article, will afterwards receive the attentions of the blackening brush.

WALL BRACKETS.

For Wall Brackets (as Fig. 75) a T-shaped piece of wood about three-eighths inch wide is often desirable. If the Bracket is large, the T must be of Iron; or strips of Ribbon Iron may

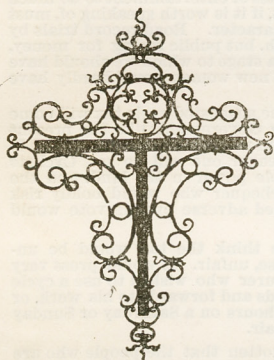


Fig. 75.

be fixed to the wood to prevent the possibility of its giving way. The object of this T is to provide a hold for the Shelf and Support. It gives a very unfinished appearance if these run right up against the *edge* of the Strip Iron; besides there would be no adequate means of adjusting them. The Support, as usual, will simply be one-half of the lower portion of the Bracket, but it will not require any framework. The Shelf may be of polished or varnished wood, or it may be of Iron. An Iron Grill Shelf, however, limits its own usefulness, as only certain articles can be placed upon it. There is, too, a difficulty in making it look well in conjunction with the Support. But here, again, the worker is referee, and his judgment must be trusted. Brackets have a very good appearance, and look exceptionally well when hung up against a light self-coloured Wall Paper.

Corner Brackets are not generally recommended for Bent Iron Work, the chief reason being that they must necessarily be put in a corner, and are, therefore, too far removed from the admiring or the critical eye.

It must be remembered that a Bent Iron Ornament has to be viewed somewhat differently from a piece of Fretwork. The Fret Article has to be looked at from the front; it is the surface which has to be seen—the fret, whereas a Bent Iron Ornament is seen to better advantage when “half on.” (Here, of course, the *article* is alluded to, not the *reader*.) The full front view shews but a thin wiry line, but a half-side aspect gives a real impression of the Scroll Ornament at a glance.

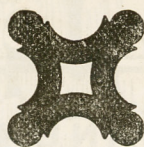


Fig. 76.

little Fret-cutting, as well as working in Bent Iron, he should certainly try to combine the two Arts. With Inkstands, Pen Holders, Letter Racks, and many other Ornaments, fretted pieces of woodwork harmonise well with the Ribbon Iron. The introduction of a little wood can also be very helpful in the process of fixing. In many cases it is preferable to Iron, as it is much lighter, and can be handled more freely. Holes are not easily drilled in solid Iron, while with wood it is mere child's play. In saying this, however, the reader must be warned against the danger of recklessly trusting to wood, when the actual size of the article demands the use of Iron for strength and durability. This would be a serious error, as in some unlucky moment the whole article might collapse, and the tedious work of days would be undone.

Bear in mind that the wood used must be tough and strong. Pine, for instance, is far too soft; Birch or Lime might occasionally be tried; but the best common woods are Ash and Oak. Mahogany is good when a polished Stand is required.

(To be continued.)



Fig. 77.

BENT IRON WORK.

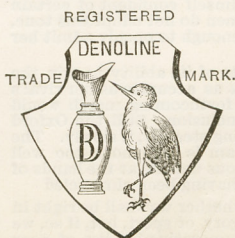
Send a 1d. stamp for particulars of our New Tool, “THE IONICAL,” pronounced by all who have used it to be invaluable for producing accurate spiral curves.

—❖ BAMBOO WORK, ❖—

The Popular Hobby. Price Lists and Deserts sent on receipt of stamp for postage.

THE AMATEUR'S MARKET, LEEDS.
8, BRITANNIA BUILDINGS,

GESSO AND MODELLING.



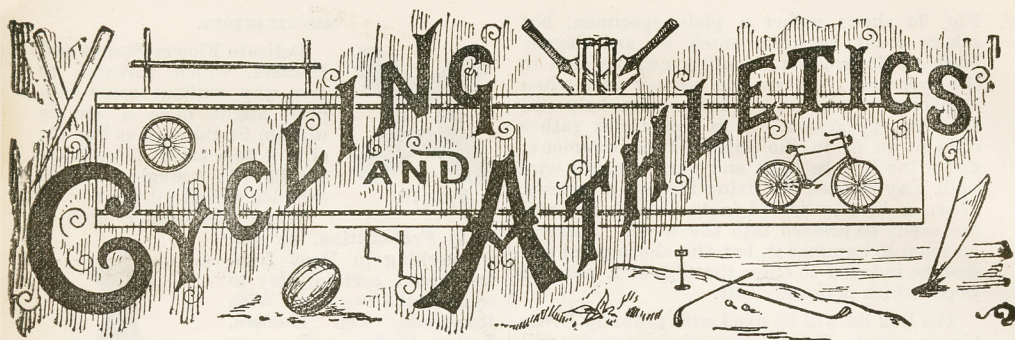
Notes on Gesso Work, by Walter Crane.—“For working in Gesso the best material I have met with is called ‘Denoline.’”

The Studio.—“For Modelling ‘Denoline’ is equally satisfactory.”

To popularise “Denoline” with the readers of *Hobbies* we will send two ONE SHILLING Tins of “Denoline” and a Book

of Instructions, post free, for 1s. 9d. and a Coupon, up to 31st December, 1895.

THE DENOLINE CO., 40, George St., Edinburgh.



NOTES ON SPORT.

THE Rugby Union would seem to be well rid of its late adherents in the North. Those who have read the new rules and restrictions which the Northern or "Broken time" Union has imposed on its men and clubs, will, we are sure, endorse our opinion.

It seems that the Northern Union has fixed the princely sum of 6/- per week as the reward for its players. To earn this, "time" must be broken—that is, a man must leave his work early, or repair to it late, at least once, in order to qualify for the receipt of the 6/- We take it that if he loses but ten minutes, that is sufficient.

At anyrate the players do not get their money and retain their freedom, as in return for this somewhat paltry consideration each man has to sign an agreement absolutely binding himself to his club, from which he is unable to break free without special leave. Even should he obtain permission to make a change, he is limited in his choice of new friends to the 22 clubs which constitute the newly-formed Union. Further than that, this 6/- makes the player, who once accepts it, a professional at running, swimming, and cycling. We do not think the position of a Northern Union Rugby Football Player is an enviable one.

We think it would have been more satisfactory if those Northern men, who could not see their way to play football quite for love, had embraced the Association code of rules. A man who is paid for "broken time" can be none other than a professional. There are very few sports which we care to see exploited by paid players, and, of all sports, we think rugby football is the one least suitable. Rugby is pre-eminently the amateurs' game, and unless it is played for love and for sport, in the best of tempers, and with mutual consideration, it is and must be a failure. We do not prophesy a very brilliant or unchequered career for the Northern Union.

Football at Cambridge is looking up wonderfully. The University teams at both Rugby and Association are doing wonderfully well, the exponents of the handling code being exceptionally brilliant. The great match with Blackheath a week or two ago, and which ended in a scoreless draw, is said to have been productive of the finest football ever seen at Cambridge. The Light Blue men are very confident about the result of the great annual inter-University match against Oxford which is fixed for the 11th inst.

Previous to a boxing match it is quite customary for each pugilist to profess himself confident of certain victory. The University men do not adopt this tone, and Oxford is even bold enough to openly admit her anticipation of defeat.

If the Cambridge estimate of its ability to win the inter-University contest is as accurate as her rival's forecast, the result of the forthcoming match would appear to be a foregone conclusion. Still the Oxford men are said to be improving steadily, if slowly. The Dark Blue Association team is also none too well spoken of this year, numerous defeats at the hands of comparatively weak clubs having been chronicled.

We are not quite sure whether we shall be right in putting chess in the category of sport, but, if so, we ought to mention, while enumerating the list of poor Oxford's defeats, that the combined University has been beaten rather heavily by the Birmingham Chess Club.

These-called races for women recently decided at the Aquarium, London, can only be regarded as one of

those unfortunate sorts of catastrophies which might happen to any sport. We look at the Aquarium show with nothing but regrets. That women should race at all is undesirable, but that they should take part in exhibition performances, under fire of the gaze of the Aquarium lounge, is to us almost incredible. Cycling as a sport and pastime is now far too firmly established for this class of entertainment to do much harm. Still the result, if it is worth speaking of, must be of a detrimental character. Road record trials by women are bad enough, but public racing for money, at the Aquarium, is a stage to which we should have thought the newest of new women would hardly have aspired.

We do not think the suggested cycle tax will come to much. If a strong Government like the present does not see its way to recommend such a tax, it is hardly likely that a weaker one will do so. Cyclists are now a considerable power in the land, and the Chancellor of the Exchequer who would boldly risk the result of a combined adverse cycling vote would be a brave man.

Apart from this, we think the tax would be unpopular and, in a sense, unfair. It would press very hardly upon the labourer who wished to use a cycle for travelling backwards and forwards to his work, or to get out for a few hours on a Saturday or Sunday into the fresh country air.

It must not be forgotten that the people who are shouting so loudly for the taxation of cycles are the lineal descendants of the folks who opposed the railway train for fear it should prevent the hens from laying and the cows from giving milk. All cyclists are not gentlemen, we know, neither are they all angels; but in every other large class of people, that can be classed together, the same thing will be found. We trust the unruly section of cyclists may be led to mend its ways, but the ridiculous and childish prejudice that still exists against the votaries of the wheel must come to an end sooner or later.

The Stanley Show of cycles has for years been a landmark in the wheel world. The exhibition at the Agricultural Hall, London, which has recently closed, was a worthy successor to its forerunners. The Show was well supported, both by cycle makers, and especially by makers of cycle parts and accessories, as well as by the general public. The larger companies of cycle makers are nearly all pledged to the "National" Exhibition at the Crystal Palace, the only really big firm trading in complete bicycles at the Agricultural Hall being the Rudge, Whitworth Co., of Coventry and Birmingham. This firm made the best exhibit. Great interest was, however, centred in the displays of one French and three American firms, all of whom sent some well-finished, business-looking, machines, although we can hardly see what probability there is of these foreign makers doing any extensive business in this country. The Stand of the Simpson chain naturally excited some interest, but we do not think Mr. Simpson was successful in persuading many people that his chain embodied "An entirely new principle in mechanics," or that any such advantages in speed and ease as have been claimed for it could be substantiated to the satisfaction of an impartial critic. The Bi-tricycle, which is a bicycle having two twin frontwheels running close together, we regarded as purely a fad. Such a cycle has many obvious drawbacks, and we failed to see that it offered any corresponding advantages.



*** All communications to be answered in these columns should be marked "Correspondence," and must be addressed to the Editor of *Hobbies*, Bouverie House, Salisbury Square, London, E.C. In no case can we reply to enquiries by post.

ELECTRICITY.

W. K. NOTLEY.—The best battery for your purpose is that made by the E.P.S. Co., of 4, Great Winchester Street, London, who will supply an accumulator, and also tell you the nearest place (to you) where it may be recharged.

NON ELECTIC.—We do not understand the battery from your description; but even if we did, we should want to know the E.M.F. and internal resistance of each cell, to be able to calculate the candle power. We cannot tell you how long your battery will last without recharging.

DYNAMO.—You have omitted to give the current in Amperes, so we cannot possibly even give a guess at the candle-power or the power required to drive it. You will not light your lamps at all if you connect as you propose. We can hardly tell how long your E.S. Cell will last; perhaps six months.

FRETWORK, CARVING, &c.

FRED HALFORD.—We have your suggestion as to *Hobbies* Coupons, and have made a note of it.

H. MARTIN.—We do not fancy that you can get such a pattern as you wish. Write to any publishers of Fretwork Designs.

R.J.S.—You can easily obtain an ink-bottle for *Hobbies* Design No. 5 from any fancy stationer. The prices vary, but you should get a good one for a shilling.

ALEX. STEWART (Campbeltown).—The best Fretwork Machine and Lathe which you can purchase at a really moderate cost is the "Companion." We believe the price is 38/-

FRETWORK.—Use French Polish. We cannot give full instructions in a short answer, but the whole subject of polishing will be dealt with later on. Meanwhile any local cabinet-maker will give you a few hints.

H. W. PECK.—1. You will find it much less trouble to buy the reprint of *Hobbies* No. 1 with its Presentation Design, than to try to copy the Pattern from the finished Midget Photo Frame. Why not transfer your patterns by means of black carbon paper instead of pasting them down? Or, if you prefer the latter plan, why not make a duplicate design by placing a sheet of transparent tracing paper over it, and tracing the outline with a sharp pencil? 2. We do not stock Fretwork Patterns for sale.

METAL WORK.

T. WHITNEY.—You will find some suggestions as to the making of Hall Lamps in one of our coming chapters on Bent Iron Work.

J.R.W.—A list of the Tools required for Bent Iron Work is given in *Hobbies* No. 1. You can obtain them from any of the dealers in Bent Iron Work Materials who advertise in our columns.

STAMPS.

K.M.B. (Maidstone).—It is possible that your stamp is an oxidised $\frac{1}{2}$ anna red. Better let us see it.

C.H. (Chertsey).—The stamps are Mexicans. We should not care to value them without seeing the specimens.

C.P. (London).—Your Brunswick stamps are certainly "some good," and if you will send them to us with stamped envelope for return, we shall tell you how much they are worth.

A.R.T. (Falkirk).—Any stamp catalogue would answer your purpose. Lincoln's, perhaps, would be better for you than Gibbons', illustrations of the various issues being much clearer in the former.

D.R.B. (Ayr).—Most decidedly. The Van Diemen's Land stamp, pen-cancelled, would be worth very little compared with a properly postmarked specimen. If you send us your copy we will tell you what it would fetch.

H.M.G. (Marlborough).—The best English catalogue, and, indeed, the standard book on the subject, is Hilekes' "Catalogue of English Adhesives," published at 4s. 6d., at 64, Cheapside, London, E.C. The same firm issue an album of the sort you require.

PHOTOGRAPHY AND LANTERNS.

J. BOYLE, JUN.—You will notice that we comment upon the "Lantern Slide Exchange" under "Notes of the Week" (Photography). We quite hope to be able to arrange something of the kind.

A CONSTANT READER.—Suggestions as to Slide making will be given in our Lantern series of articles. We do not purpose giving away Presentation Designs of Slides with *Hobbies*.

E. HALL.—The plate you mention is not now in the market so far as we know. You might write to Fallowfield's, 146, Charing Cross Road, W.C.; they could certainly tell you whether it is possible to obtain the plate.

J.E.S.—If you want to make a pen and ink Lantern Slide you should use ground glass, with a very fine "matt" surface. If you only want to put a title upon the glass, you had better varnish the Slide with negative or collodian varnish.

S. E. FRIDHAM.—We shall as soon as possible publish one or two articles upon Stereoscopic Photography. In the meantime we would advise you to write a line to Mr. W. I. Chadwick, St. Mary Street, Manchester, who, we think, issues a pamphlet upon Stereoscopic Photography, and who makes a special convertible Camera.

W.S. (Wantage).—We can thoroughly recommend "Photography applied to the Microscope," by F. W. Mills, 1s. 6d. Or, if you require a more advanced book, "Practical Photo-Micrography," by Andrew Pringle, 10s. 6d. Both these books are published by Liffé & Son, or can be obtained of our publishers.

T. R. JARDLEY.—On reference to the "Notes of the Week" you will see that one of our subscribers, at least, besides yourself, is ready to help to form the "Lantern Slide Exchange." We will gladly lend you a few Slides for Christmas, if you will write and say when you need them. You must pay carriage both ways. Shall we send you fifty?

BAMBOO WORK.

J.R.W.—The Tools you require for Bamboo Work are—Bending Iron, Bunsen Burner, Tenon Saw, Hammer, Rasp, and Bradawl. Other Tools are useful, but not absolutely necessary. We have a number of articles on this hobby already prepared, and will insert them whenever we can find space.

*** As we are obliged to go to press nearly a fortnight before the date of publication, we must ask Correspondents not to be disappointed should answers to their queries not appear so soon as they expected. In every case we shall endeavour to supply an answer in the first possible issue.



THE INDUCTION COIL.

HOW TO MAKE AND USE IT.

CHAP. VII.

IN the last chapter it was shewn that an Electric discharge through a partial vacuum shews very marked differences to that taking place through air at the ordinary atmospheric pressure. In the latter case the discharge appears in the form of a spark, or short flash, not unlike a flash of lightning in miniature; but when a rarefied medium is employed the spark itself disappears, giving place to a more voluminous, but softer and less vivid illumination.

At the positive electrode this illumination takes something of the form of a brush extending in the direction of the negative, but the negative electrode itself appears surrounded by a distinctive glow, or aureole, of its own. In rarefied air or gas the discharge can also take place through a much greater distance than under ordinary conditions, until a very high degree of rarefaction is reached, but when that degree has been passed a reverse action sets in, so rapidly indeed that an absolute vacuum is assumed to be an absolute insulator—probably the only one. In the case of rarefied air alone, the brush is of a red colour and the aureole violet. A trace of the vapour of alcohol, turpentine, naphtha, or other volatile hydrocarbon, causes this red brush to split up into bright bands alternated with dark ones. If very small quantities of various gases are injected into the globe, a variety of colour is imparted to the illumination. Thus for instance carbonic acid gives a stratified green brush and a lavender coloured aureole; nitrogen, a red brush and violet aureole; and hydrogen, blue and red. Then again, the light emitted from these discharges has the power of producing brilliant fluorescence in certain substances, particularly in uranium glass, the sulphurets of calcium and strontium, and in solutions of sulphate of quinine. Uranium glass exhibits a brilliant green fluorescence; sulphate of quinine, blue; and the calcium and strontium sulphurets, a bright yellow.

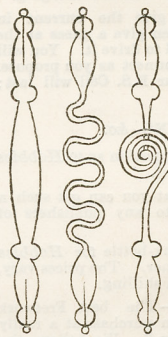


Fig. 22.

The most convenient way of practically producing all the different effects just enumerated will be with the aid of vacuum tubes, which were first made by Geissler, an inhabitant of Bonn, after whom they take their name of Geissler's tubes. These are made of thin glass, and have two platinum electrodes passing through and sealed into the ends. The discharges, of course, take place between the inside ends of the electrodes, and through any desired medium contained in the tube. They are usually of about five to twelve inches long and of a wonderful variety of shapes, a few of which are illustrated here. When the fluorescence of uranium glass is desired to be shewn, it generally constitutes the substance of the tube itself. In other cases the fluorescent body may be contained within the vacuum tube, or in a separate glass vessel. A few of the more common types will now be described. In Fig. 22 are given three shapes of the simple tube employed to shew discharges through rarefied air and gases. To connect them to the Induction Coil a couple of silk covered wires are to be used, one end of each wire being placed in one of the secondary terminals of the Coil, and the other two ends hooked into the platinum loops, or electrodes, at the ends of the tube. The most intense illumination will generally be noticed in the most contracted portion of the tube.

A different form is shewn in Fig. 23, consisting of a long tube with a number of uranium glass bulbs interspersed along its length.

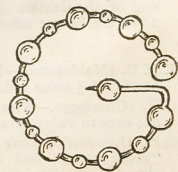
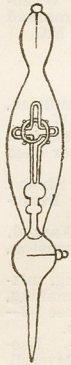


Fig. 23.

This is generally known as a bulb tube, and gives very pretty effects owing to the fluorescence of the uranium glass.

Fig. 24 illustrates a rather complicated form, consisting of an inner tube, through which the electrical discharge takes place, and an outer containing tube. In the intervening space between the inner and outer tubes, a solution of sulphate of quinine, or other fluorescent substance, is placed: the result, as may be imagined, is very beautiful. Somewhat similar tubes, but with the outer vessel of a globular shape, admitting of larger designs, are shewn in Fig. 25. The inner tube may take the



form of flowers, vases, animals, etc. A particularly beautiful tube of this kind is known as Gassiot's Cascade, see Fig. 26. As shewn, there is an outer vessel divided up internally into three sections by glass partitions. The middle part contains a vase of uranium glass into which dips a tube leading up to the top division. The middle and lower sections of the globe are connected by one or more holes passing through the lower partition; while the electrodes, as can be easily seen, are sealed into the extremities of the globe. When connected with the Induction Coil, the luminous discharge will pass from the upper portion of the globe, down through the tube to the bottom of the vase from which it appears to rebound upwards and outwards, over the edge of the 'now' fluorescent vase, falling gracefully down all round, and finally passing through the lower partition to the electrode. The upper and lower bulbs will also appear luminous, while the uranium vase glows with its own green fluorescent light. Other tubes may be made to represent illuminated writing, mottoes, monograms, names of celebrated people and places, or, in fact, nearly anything that human ingenuity can devise. Gassiot's Star, illustrated in Fig. 27, is produced by the rotation of a single tube by means of a little driving machine, known as the vacuum tube rotator. The rotator may be worked by hand, or by a small electric motor, and produces a star-like effect. It is, of course, an optical delusion.

The experiments with vacuum tubes are, perhaps, the most beautiful that can be performed with the Induction Coil, but there are also a great many others which claim attention, and these will now be dealt with in their due order. Previous mention has been made of the Leyden Jar; this can be charged from the Induction Coil, as follows:—

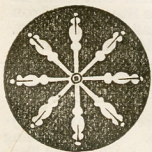


Fig. 27.

Insulate the Jar by placing it upon a dry sheet of glass, or ebonite, and connect one of the Coil electrodes with the ball leading to the inside coating of foil by a short piece of wire; attach one end of another wire with the other electrode, and hold



Fig. 24.

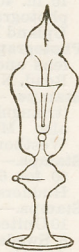


Fig. 26.

the loose end of this wire near, and pointing at, the outer coat of foil, so that the charge may pass. By this means the Jar can be quickly charged, but bear in mind that there must be a short space between the outside coating of foil and the end of the charging wire. Many experiments may be made with the Leyden Jar, and among them a very interesting one known as Lichtenberg's Dust Figures. This necessitates a dry sheet of glass, or other insulating material, together with some powdered sulphur and red lead. Take up the charged Leyden Jar by its outer coat, and with the ball trace out any design upon the glass, or, if preferred, the design may be traced with an iron point connected by a wire with the ball of the Jar. This is to impart a charge to the glass sheet, either positive or negative, as the case may be. Place the mixed powder of red lead and sulphur into a muslin bag, and sift it over the glass. By this process the red lead will become positively electrified and the sulphur negatively, and each will settle down in its own peculiar way, manifesting the traced design. Well dry and mix the powder before use.

(To be concluded.)

Our Advertising Coupon Scheme.

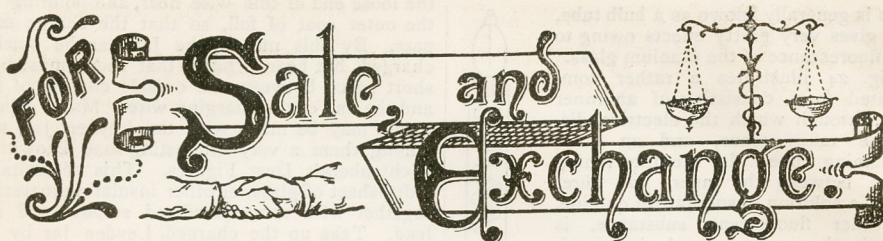
Every copy of our Weekly Presentation Supplement now contains a Coupon which, by special arrangement with our Advertisers, will, under the following conditions, be accepted by the Firms whose names are printed on the back of the Supplement as an equivalent of Threepence in Cash.

Each Coupon is numbered and dated, and will remain good for three months. The Coupons will be accepted in payment, not only for any articles specifically mentioned in the advertisements in our pages, but for any goods sold by the Firms who have agreed to take them.

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Further details of the scheme, with a list of Firms who have agreed to accept Coupons, will be found on the back of the Weekly Presentation Supplement. A Table shewing the system of discount from One Shilling to a Pound is also given.



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NOTE.—Trade Advertisements can only be inserted in this page at the rate of one shilling per line.

Antique Carving Patterns.—Sets 1, 2, and 3 contains 26, 22, and 25 large patterns respectively, of panels, rails, &c. 1s. free.—Jackson, Thorngate, Barnard Castle.

Bargain.—Junior Bicycle for sale, good condition, new tyres, £1.—G. Shiers, Lexden, Princess Road, Bournemouth.

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Cheap Typewriter wanted in good working order, send particulars.—Silver, Letcomb, Wantage.

Christmas Presents.—A few choice old steel engravings, well framed, very select. Send for particulars.—Baker, West End, Southampton.

Collie.—For sale, a grand champion-bred Collie Bitch Pup, sable and white; should make a winner; age six months. If sold at once the low sum of two guineas will be accepted. Particulars, pedigree, etc., from Chas. Smith, Milton House, East Dereham, C. 3.

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How to make an Electric Night Light that will work well for years without attention, post free, 6 stamps; also how to attach an electric alarm to clock, 6 stamps.—James, 11, Stanbury Road, Peckham, S.E.

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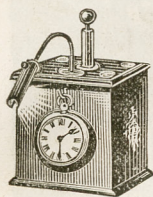
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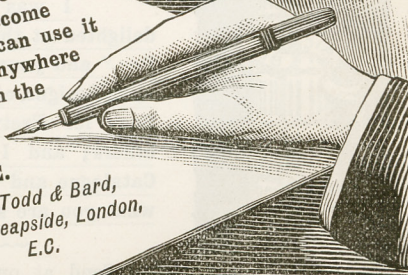
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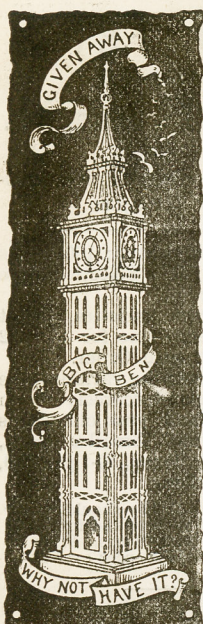
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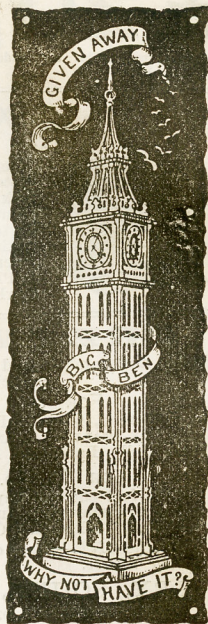
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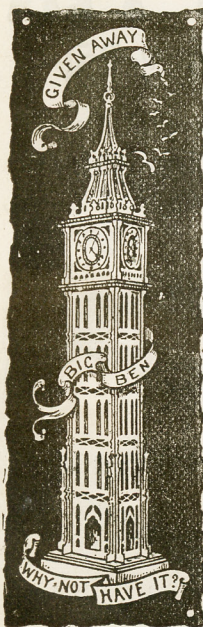
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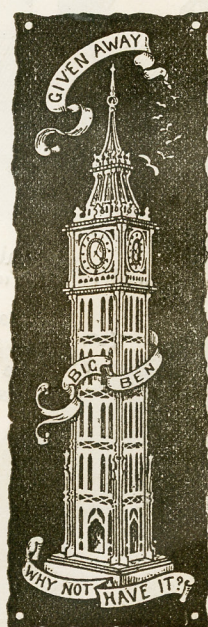
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